

# The Builder.

No. CLXIV.

SATURDAY, MARCH 28, 1846.



ON September last, we gave the particulars, illustrated by diagrams, of some improvements in arranging stoves and other apparatus for heating and ventilating, for which her Majesty's letters patent had been granted to Mr. Leslie.\* The improvements contemplate the two-fold advantage of economy of fuel, and a means of ventilation more perfect and extensive, than has yet been ventured on for dwelling-houses.

The plan, our readers will remember, includes the construction of flues of a different form from those usually adopted, viz., a rectangle, 18 by 4½, and the formation of a long, narrow, opening or chase into the flue above the fire-place. The latter is thus described in the inventor's specification:—

"In order to ventilate the kitchen or room in which such apparatus is set, I cause a long opening to be made into the chimney, rising from the upper surface of the boiler to the cornice or ceiling, which opening may be from two to four inches wide; and it will be found that by such means there will be a constant passage of the air from the kitchen or room, through such long opening, by which any impure air will be carried off; and, in order that the outgoing air may not be greater than the case requires for the time being, I have iron covers, shutters, or slides, which may be caused to cover such opening to a greater or less extent, and such covers may be a series of doors, slides, or shutters, one above the other, hinged to the side of the opening; or they may be metal plates moving on axes, in the character of louvre boards, so arranged, that any of them may be closed, or more or less open. And it will be found by this arrangement of apparatus there will be no tendency for the smoke or vapours passing up the chimney from the fire, to pass into the kitchen or room, but there will be a constant draft from the kitchen or room up the chimney, which will not only carry away the products from the fire up the chimney, but also the air from the room or kitchen; thus producing any desired degree of ventilation, as well as an advantageous consumption of fuel."

Now it will be remembered, that both these arrangements are expressly prohibited by the unlucky Metropolitan Buildings Act, which absurdly provides, that "no flue may be used for a smoke-flue which is of less internal diameter in any section than 8½ inches," and that no chimney-breast or flue shall be cut into for any other than two or three particular purposes specified, not including the purpose in question. We say "absurdly" provides that no flue may be used which is of less internal area in any section than 8½ inches, because it assumes a knowledge which, undeniably, is not possessed,—as in the case of drains, the folly of which we have already demonstrated. There are few things of which architects and builders, indeed all, are more profoundly ignorant than they are touching the size, form, and arrangement of flues and fire-places, in proof of which, we would simply point to the tops of the houses in any street or square in the metropolis, or to the abominable disfigurement of the Royal Academy of Arts in Trafalgar-square. And yet, forsooth, the Buildings Act is to forbid, without any ground whatever for the prohibition, that no flue shall be less in any section than 8½ inches!

\* See p. 631, Vol. III.

The Act, however, provides for errors of this sort, by giving certain modifying powers to the official referees and Commissioners of Works in the 11th section, "for the purpose of preventing the express provisions of this Act from hindering the adoption of improvements, and of providing for the adoption of expedients either better or equally well adapted to accomplish the purposes thereof." Accordingly, Mr. Leslie, wishing that his patent should not be confined to the suburbs and the provinces, and learning that permission had been obtained, by a modification of the Act, for the insertion of Dr. Arnott's ventilating valve, forwarded a description of his apparatus to the official referees, and requested the same facilities.

The official referees, as in duty bound, reported the representation to the Commissioners of Works, but to our surprise and regret, accompanied it with the following expression:—"It is our opinion that the modifications requested should not be made, because the same would tend to lessen the stability and security from fire of buildings, which it is the principal object of the Metropolitan Buildings Act to increase and maintain."

The commissioners accordingly decided against the inventor's appeal. The inventor then solicited a statement of the specific grounds on which their opinion was founded, and of any mode by which the objections might be obviated. This was granted, and is as follows:—

"That the form which Mr. Leslie desires to be permitted to adopt for the inside of flues, (namely a rectangle 18 inches by 4½ inches on plan, as shown by the diagram annexed to his representation) is objectionable as it regards stability of structure, inasmuch as (if permitted) flues might be carried up in 14 inch walls, and tend greatly to diminish the efficacy of party-walls.

That the said form is also objectionable as it regards the tendency which it would have, as we believe, to increase the deposition and accumulation of soot, whilst its long and narrow transverse section would materially increase the difficulty of cleansing the flue; it would indeed require a different apparatus from that in ordinary use.

That the cutting which Mr. Leslie desires to be permitted to make into flues, (namely a slot or chase about 4 inches wide, and the whole height of the breast within any story, or nearly the whole height of the breast from the top of the chimney opening to the ceiling, as shown in the diagram annexed to his representation) is objectionable, inasmuch as it would materially weaken the structure of the wall in which it might be made.

That the said opening is also objectionable, inasmuch as it would not be properly protected, for Mr. Leslie's apparatus is not self-acting; it is liable from neglect to be left with the valves open.

And, secondly, with respect to the mode by which, in our opinion, "such objections may be obviated so as to insure stability and security from fire, we hereby report,—

That we are not aware that the said objections can be entirely obviated, and having regard to the peculiarly important provisions of the Act to guard against risk by fire, we do not feel that we can submit any mode in connection with the proposed operations, that will ensure stability of construction and security from fire."

Now we have no hesitation in saying that these objections may be removed without the slightest difficulty,—they have really no weight whatever; and knowing as we do, the scientific acquirements of Mr. Hosking, and his own efforts to improve the ventilation of dwelling-houses, to which subject he justly attaches much importance, we feel satisfied that they are the result of wrong or insufficient information. The simplest provision possible, would prevent what the referees deprecate, as to carrying up

the flues in 14-inch party walls without additional brickwork, or weakening the walls by the chase; the difficulty of sweeping is merely a joke, and as to the danger from fire, we advise Mr. Leslie to invite the referees (now that he himself is better qualified to develop his ideas than he was when he first applied), to accompany him to Lord Lonsdale's house at Barnes, where his arrangements have been adopted in the sitting rooms, and let them make what experiments they please to arrive at a sound judgment.

When we first alluded to the patent, exercising a necessary caution, we did not express an opinion as to the value of the long chase; we said simply what is unquestionable, that "as a ventilator its effect is necessarily very powerful." Consideration, however, and our recent examination of Lord Lonsdale's rooms, have satisfied us of its value, and of the importance of removing any difficulties that may lie in the way of its adoption, or at all events the adoption of the principle.

Arnott's valve is useful, but limited in its action; whatever is said in favour of its introduction, can be said with still greater force for Leslie's arrangement. It is only by degrees that a knowledge has been obtained of, how much pure air is required to support healthy life; the necessity of providing means for getting rid of a corresponding quantity of vitiated air is not yet fully understood. We do hope that the referees will consent to receive fresh evidence on the subject, to see the arrangement in operation, and to re-consider their opinion. In assembly rooms, workshops, hospitals, it will be of the greatest value, and it seems desirable that it should be applied and perfected in the metropolis, and thence spread into the provinces, rather than be kept out of the former by law, until public opinion insists on its admission.

Amongst other advantages, it seems likely to induce a greatly extended use of gas; and as respects decoration, it opens a fresh field. At Lord Lonsdale's the fire-places are faced with painted porcelain, by Copeland and Garrett, with excellent effect, and the valves will be formed of the same material; this is a part of the subject, however, to which we may have occasion to refer at greater length hereafter, our present purpose is, on public grounds, to assist in obtaining immediately such a modification of the Act, that it may no longer hinder the adoption of the arrangements in question.

## ROYAL INSTITUTE OF ARCHITECTS.

ENGLAND INDEBTED TO THE ARCHITECTS FOR THE BOOZROOM MARBLE.

At the ordinary meeting of the Institute, held on Monday last, Mr. Tit, vice-president, in the chair, much interesting matter came under notice. The subjects for designs and essays, for which medals will be given next year, were announced as follows:—

1. On the adaptation and modification of the orders of the Greeks by the Romans and moderns.

2. On the best system to be adopted, with regard to the arrangements for the thorough drainage of a town house, and of a nobleman's mansion and offices in the country respectively, comprising the general arrangement for carrying off the waters and sewage, the sizes and most convenient forms for the drains or conduits, the requisite fall, the description of material to be employed, and the several precautions for the prevention of damp, smell, and passage of vermin, to be accompanied by block-plans and details.

The same medallion to be awarded to the best design for an edifice suitable to the congregational worship of the Church of England and capable of accommodating 1,000 persons